Prüfbericht-Nr.: *Test report no.:*	**CN24KIJQ 001**	**Auftrags-Nr.:** *Order no.:*	**168498513**	Seite 1 von 13 *Page 1 of 13*
Kunden-Referenz-Nr.: *Client reference no.:*	**N/A**	**Auftragsdatum:** *Order date:*	2024-08-12	
Auftraggeber: *Client:*	**Shenzhen RAKwireless Technology Co.,Ltd.** Room 506, Building B, New Compark, Pingshan First Road, Taoyuan Street, Nanshan District, Shenzhen, Guangdong, P.R. China			
Prüfgegenstand: *Test item:*	WisNode Bridge Serial Prime			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	RAK2470 (Trademark: RAK)			
Auftrags-Inhalt: *Order content:*	Test Report			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15: Subpart B Section 15.107 CFR47 FCC Part 15: Subpart B Section 15.109 ICES-003 Issue 7 October 2020			

Wareneingangsdatum: *Date of sample receipt:*	2024-08-12	Refer to photos documents
Prüfmuster-Nr.: *Test sample no:*	A003794500-001, 002, 003	
Prüfzeitraum: *Testing period:*	2024-08-12 - 2024-11-07	
Ort der Prüfung: *Place of testing:*	Refer to section 2.1	
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.	
Prüfergebnis*: *Test result*:*	Pass	

geprüft von: *tested by:* ***Datum:*** *Date:* 2024-11-15	X Hardy Suo	**genehmigt von:** *authorized by:* **Ausstellungsdatum:** *Issue date:* 2024-11-15	X Lin Lin
Stellung / Position	Sachverständige(r)/Expert	**Stellung** / Position	Sachverständige(r)/Expert

Sonstiges /
Other: FCC ID: 2AF6B-RAK2470

Zustand des Prüfgegenstandes bei Anlieferung:
Condition of the test item at delivery:
Prüfmuster vollständig und unbeschädigt
Test item complete and undamaged

* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*P(ass) = passed a.m. test specification(s)*	*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. *The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.* *Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.*
2	Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. *As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.*
3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. *Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.* *Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.*
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the “Zero Guard Band Rule” and “Simple Acceptance” in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.

Test Summary

5.1 Conducted emissions
RESULT: Pass
5.2 Radiated emissions
RESULT: Pass

Contents

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Result.
Appendix B: Test Setup Photos.

2 Test Sites

2.1 Test Facilities

Shenzhen UnionTrust Quality and Technology Co., Ltd.
16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China

A2LA Certificate Number: 4312.01

IC Registration No.: 21600, CAB identifier: CN0032

TÜV Rheinland (Shenzhen) Co., Ltd. Subcontracts all test to Shenzhen UnionTrust Quality and Technology Co., Ltd. The tests at the test sites have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radiated Emission Test – 3m SAC						
Used	**Equipment**	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date**	**Cal. Due date**
☒	3m SAC	ETS-LINDGREN	3m	Euroshiedpn-CT001270-1317	11-Nov-2023	10-Nov-2026
☒	Receiver	ROHDE & SCHWARZ	ESIB26	100114	25-Oct-2024	24-Oct-2025
☒	Broadband Antenna	ETS-LINDGREN	3142E	00201566	29-Oct-2024	28-Oct-2025
☒	6dB Attenuator	Talent	RA6A5-N-18	18103001	29-Oct-2024	28-Oct-2025
☒	Preamplifier	HP	8447F	2805A02960	25-Oct-2024	24-Oct-2025
☒	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3117-PA	00201541	1-Apr-2024	31-Mar-2025

☒	Pre-amplifier	ETS-Lindgren	00118385	00201874	1-Apr-2024	31-Mar-2025
☒	Multi device Controller	ETS-LINDGREN	7006-001	00160105	N/A	N/A
☒	Test Software	Audix	e3	Software Version: 9.160323		
Conducted Emission Test						
Used	**Equipment**	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date**	**Cal. Due date**
☒	LISN	ETS-Lindgren	3816/2SH	00201088	25-Oct-2024	24-Oct-2025
☒	Receiver	R&S	ESCI3	1166.5950.03	25-Oct-2024	24-Oct-2025
☒	Pulse Limiter	R&S	ESH3-Z2	0357.8810.54	25-Oct-2024	24-Oct-2025
☒	Shielding room	ETS-Lindgren	843	Euroshiedpn-CT001270-1246	N/A	N/A
☒	Test Software	EZ-EMC	EZ-CON	Software Version: EMC-CON 3A1.1		

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table

No.	Item	Measurement Uncertainty
1	Conducted emission 9kHz-150kHz	±3.2 dB
2	Conducted emission 150kHz-30MHz	±2.7 dB
3	Radiated emission 30MHz-1GHz	± 4.6 dB
4	Radiated emission 1GHz-18GHz	± 4.4 dB
Remark: 95% Confidence Levels, k=2.		

2.6 Location of Original Data

The original copies of all test data taken during actual testing were at this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The Shenzhen UnionTrust Quality and Technology Co., Ltd. facility located at 16/F, Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a WisNode Bridge Serial Prime which supports Lora wireless technology.

The EUT contains two alternative Lora modules:
1) WisDuo LPWAN Module (M/N: RAK3172), or
2) LoRa Module (M/N: RAK4200(H))

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	WisNode Bridge Serial Prime
Type Designation:	RAK2470
Operating Voltage:	DC 5-12V
Testing Voltage:	DC 12V and AC 120V, 60Hz (Power supply to AC/DC Adapter)
Operating Temperature Range:	-20 °C ~ +70 °C (for d.c. source) 0 °C ~ +40 °C (for used with attached power adapter only)
AC/DC Adapter information:	Model: AD-0241200200US-3 Input: AC 100-240V, 50/60Hz Output: DC 12V Factory: AMC Technology Company Ltd.

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Normal operation with powered by d.c. source

B. On, Normal operation with powered by attached power adapter

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Block Diagram
- Photo Document

- Schematics
- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2014.
According to clause 3.1, all tests were performed on model RAK2470 with WisDuo LPWAN Module, M/N: RAK3172 and RAK2470 with LoRa Module, M/N: RAK4200(H) in this report, worst case was recorded.

4.3 Special Accessories and Auxiliary Equipment

Table 3: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N
Notebook	Lenovo	E450	SL10G10780
Notebook	DELL	Latitude 3400	14061305558
Mouse	DELL	MS111	CN-011D3V-73826-62N-0LK
Battery	Camel	CCA580	L2 400 6-QW-60(580)
Soil temperature and humidity conductivity sensor	Hunan Ruiyika	RK520-02	N/A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF). No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

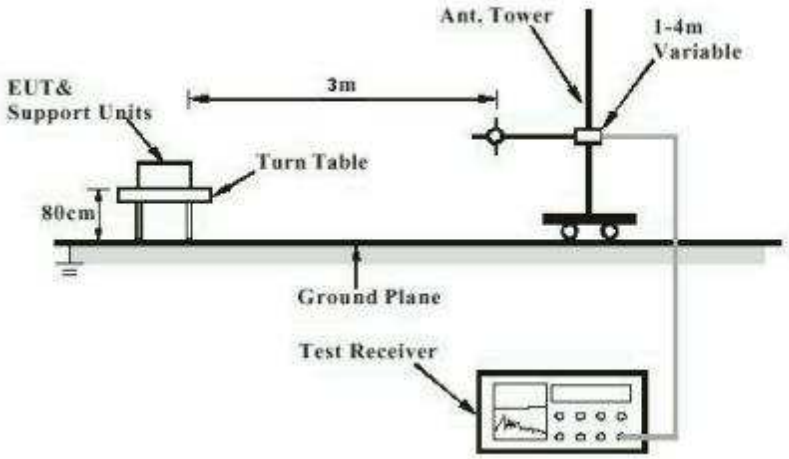


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

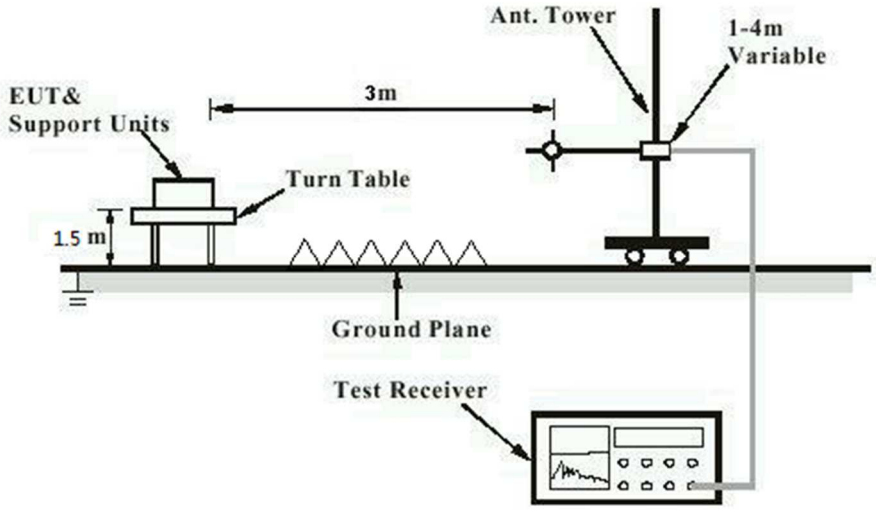
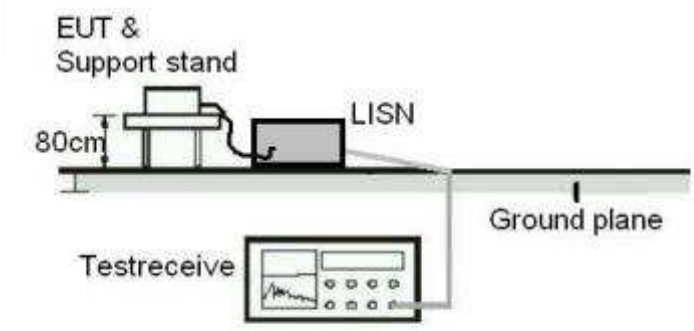


Diagram of Measurement Configuration for Mains Conduction Measurement



5 Test Results

5.1 Conducted Emissions

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.107(a) ICES-003 Issue 7, Clause 3.2.1
Basic standard	:	ANSI C63.4: 2014
Frequency range	:	150KHz - 30MHz
Classification	:	Class B
Limit	:	FCC Part 15.107(a) & ICES-003 Table 1
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2024-10-16 to 2024-11-04
Input voltage	:	AC 120V, 60Hz
Operation mode	:	B
Earthing	:	Not Connected
Ambient temperature	:	Refer to test data
Relative humidity	:	Refer to test data
Atmospheric pressure	:	101 kPa

For the measurement records, refer to appendix A.

5.2 Radiated Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.109(a) ICES-003 Issue 7, Clause 3.2.2
Basic standard	:	ANSI C63.4: 2014
Frequency range	:	30MHz to 5th highest fundamental frequency
Classification	:	Class B
Limit	:	FCC Part 15.109(a) ICES-003 Table 2 & Table 4
Kind of test site	:	3m Semi-anechoic Chamber & 3m Full-anechoic Chamber

Test Setup

Date of testing	:	2024-10-16 to 2024-11-04
Input voltage	:	DC 12V or AC 120V, 60Hz
Operation mode	:	A, B
Earthing	:	Not Connected
Ambient temperature	:	Refer to test data
Relative humidity	:	Refer to test data
Atmospheric pressure	:	101 kPa

For the measurement records, refer to appendix A.

Remark 1: The limit of below radiated emission test data is from FCC part 15.109, it also meets the limit of ICES-003 issue 7.

6 List of Tables

Appendix A

Test Results

Appendix A.1: Test Plots of Conducted Emissions

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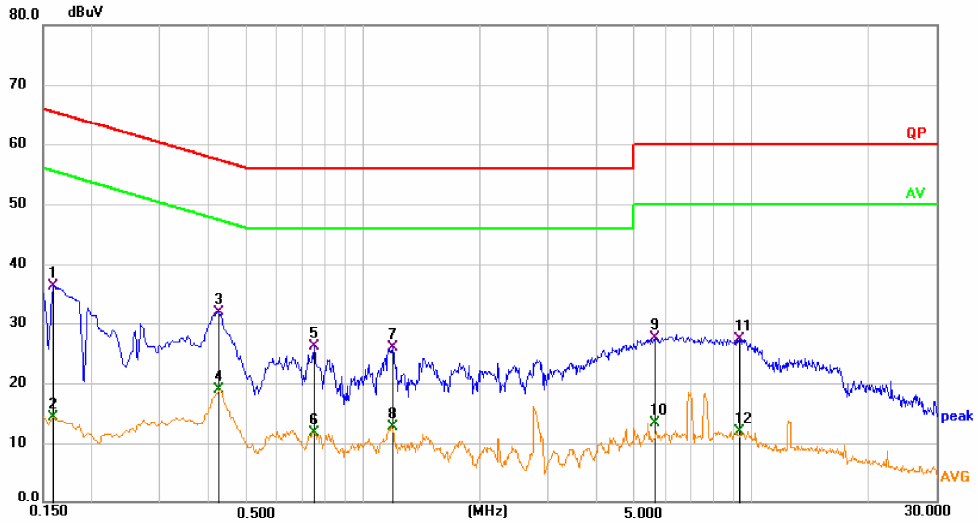
Site LAB
Limit: QP
EUT: WISNODE BRIDGE SERIAL PRIME
M/N: RAK2470
Mode: TEST MODE1:AC120V/60HZ(ADAPTOR)+NORMAL WORKING
Note:

Phase: *L1*
Power: AC120/60Hz

Temperature: 23.0 ℃
Humidity: 61 %RH
Air Pressure: 100.3 kpa

Conducted Emission Measurement

24102114222_RAK2470- Data :#1 Date: 2024/11/4 Time: 15:09:16



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1590	26.45	9.88	36.33	65.52	-29.19	QP	P	
2	0.1590	4.49	9.88	14.37	55.52	-41.15	AVG	P	
3 *	0.4244	22.12	9.84	31.96	57.36	-25.40	QP	P	
4	0.4244	9.14	9.84	18.98	47.36	-28.38	AVG	P	
5	0.7485	16.25	9.80	26.05	56.00	-29.95	QP	P	
6	0.7485	1.95	9.80	11.75	46.00	-34.25	AVG	P	
7	1.1940	16.03	9.83	25.86	56.00	-30.14	QP	P	
8	1.1940	2.84	9.83	12.67	46.00	-33.33	AVG	P	
9	5.6400	17.71	9.87	27.58	60.00	-32.42	QP	P	
10	5.6400	3.39	9.87	13.26	50.00	-36.74	AVG	P	
11	9.3030	17.40	9.86	27.26	60.00	-32.74	QP	P	
12	9.3030	2.09	9.86	11.95	50.00	-38.05	AVG	P	

*:Maximum data x:Over limit !:over margin

24102114222_RAK2470- RAK4200(H)\Data :#1 *Page: 1* Engineer Signature: david

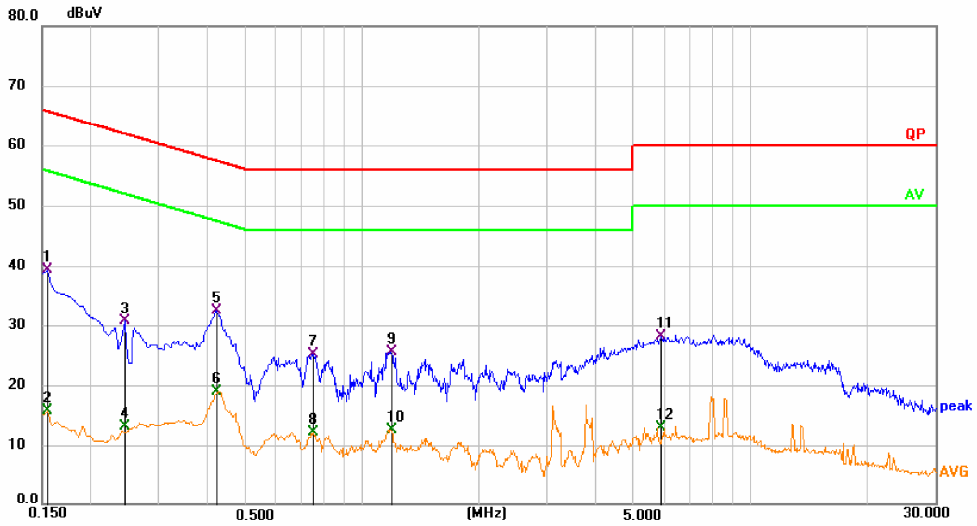
UnionTrust
Quality Test, Quality Life.

Shenzhen UnionTrust Quality and Technology Co.,Ltd.

Site LAB	Phase:	*N*	Temperature: 23.0 ℃
Limit: QP	Power:	AC120/60Hz	Humidity: 61 %RH
EUT: WISNODE BRIDGE SERIAL PRIME			Air Pressure: 100.3 kpa
M/N: RAK2470			
Mode: TEST MODE1:AC120V/60HZ(ADAPTOR)+NORMAL WORKING			
Note:			

Conducted Emission Measurement

24102114222_RAK2470- Data :#2 Date: 2024/11/4 Time: 15:12:02



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.1545	29.33	9.92	39.25	65.75	-26.50	QP	P	
2	0.1545	5.73	9.92	15.65	55.75	-40.10	AVG	P	
3	0.2445	20.75	9.86	30.61	61.94	-31.33	QP	P	
4	0.2445	3.17	9.86	13.03	51.94	-38.91	AVG	P	
5 *	0.4200	22.78	9.81	32.59	57.45	-24.86	QP	P	
6	0.4200	9.04	9.81	18.85	47.45	-28.60	AVG	P	
7	0.7485	15.37	9.82	25.19	56.00	-30.81	QP	P	
8	0.7485	2.19	9.82	12.01	46.00	-33.99	AVG	P	
9	1.1849	15.57	9.89	25.46	56.00	-30.54	QP	P	
10	1.1849	2.70	9.89	12.59	46.00	-33.41	AVG	P	
11	5.9055	18.07	9.94	28.01	60.00	-31.99	QP	P	
12	5.9055	2.98	9.94	12.92	50.00	-37.08	AVG	P	

*:Maximum data x:Over limit !:over margin

24102114222_RAK2470- RAK4200(H)\Data :#2 *Page: 1* Engineer Signature: david

Appendix A.2: Test Plots of Radiated Emissions, below 1GHz

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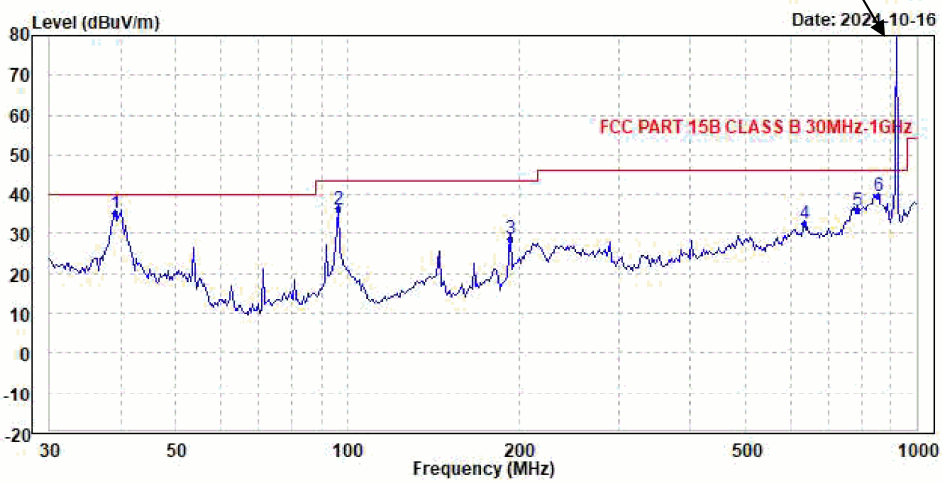


```
Condition       : 3m Vertical
Temp.(C)/Hum.(%): 24.7(C)/60.8(%)
Press           : 100.2kpa
Product         : WisNode Bridge Serial Prime
Model No.       : RAK2470
Power Rating    : DC_12V
Test Engineer   : Jackson
Test Mode       : Test Mode1: DC12V + Normal working
Remark          :
```

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1 PP	39.182	35.08	43.20	19.92	0.00	0.86	28.90	40.00	-4.92	QP
2	96.323	36.46	52.46	11.87	0.00	1.03	28.90	43.50	-7.04	QP
3	193.137	28.69	40.07	16.21	0.00	1.40	28.99	43.50	-14.81	QP
4	633.329	32.38	32.40	27.13	0.00	2.30	29.45	46.00	-13.62	QP
5	787.475	35.96	33.24	29.40	0.00	2.54	29.22	46.00	-10.04	QP
6	856.760	39.52	35.44	30.50	0.00	2.69	29.11	46.00	-6.48	QP

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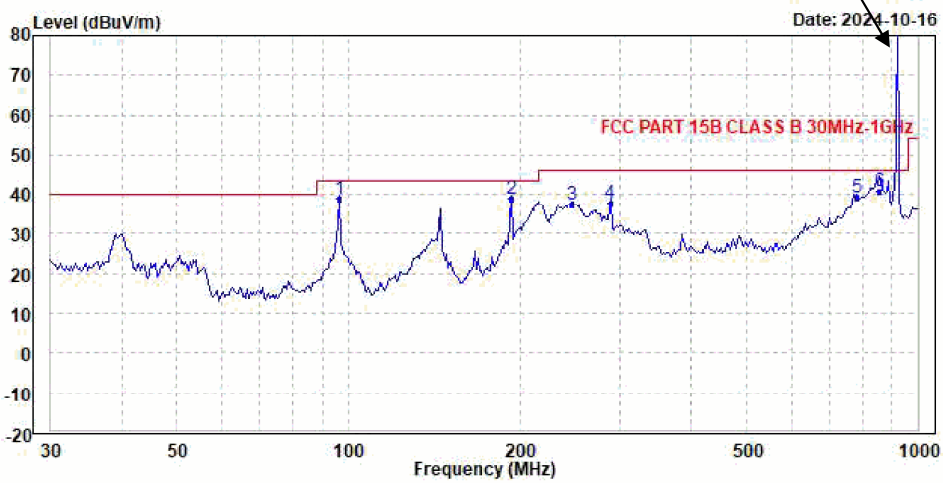
Fundamental of Lora



Condition : 3m Horizontal
Temp.(C)/Hum.(%): 24.7(C)/60.8(%)
Press : 100.2kpa
Product : WisNode Bridge Serial Prime
Model No. : RAK2470
Power Rating : DC_12V
Test Engineer : Jackson
Test Mode : Test Mode1: DC12V + Normal working
Remark :

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	96.323	38.81	54.81	11.87	0.00	1.03	28.90	43.50	-4.69	QP
2 PP	193.137	38.84	50.22	16.21	0.00	1.40	28.99	43.50	-4.66	QP
3	246.990	37.30	47.92	16.90	0.00	1.53	29.05	46.00	-8.70	QP
4	288.284	37.80	47.14	18.13	0.00	1.62	29.09	46.00	-8.20	QP
5	781.961	39.19	36.71	29.18	0.00	2.53	29.23	46.00	-6.81	QP
6	856.760	40.66	36.58	30.50	0.00	2.69	29.11	46.00	-5.34	QP

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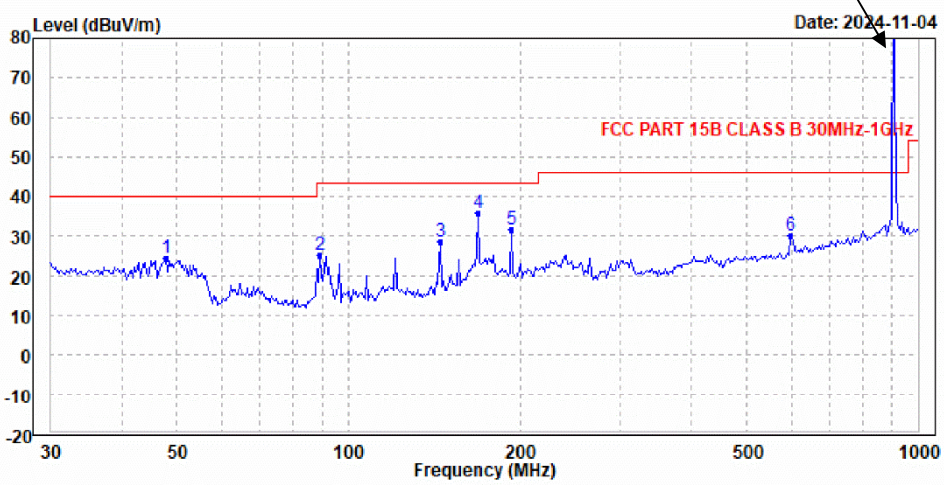


```
Condition       : 3m Horizontal
Temp.(C)/Hum.(%): 24.5(C)/54.0(%)
Press           : 100.3kpa
Product         : WisNode Bridge Serial Prime
Model No.       : RAK2470
Power Rating    : AC 120V/60Hz
Test Engineer   : Linson
Test Mode       : Test Mode 1 : 120V/60Hz(Adaptor) + Normal working
Remark          :
```

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	47.703	24.68	37.78	14.99	0.00	0.81	28.90	40.00	-15.32	Peak
2	89.158	25.37	41.75	11.53	0.00	0.99	28.90	43.50	-18.13	Peak
3	144.790	28.67	43.59	12.80	0.00	1.22	28.94	43.50	-14.83	Peak
4 PP	168.997	35.84	48.00	15.50	0.00	1.31	28.97	43.50	-7.66	Peak
5	193.137	31.84	43.22	16.21	0.00	1.40	28.99	43.50	-11.66	Peak
6	598.707	30.22	31.00	26.45	0.00	2.27	29.50	46.00	-15.78	Peak

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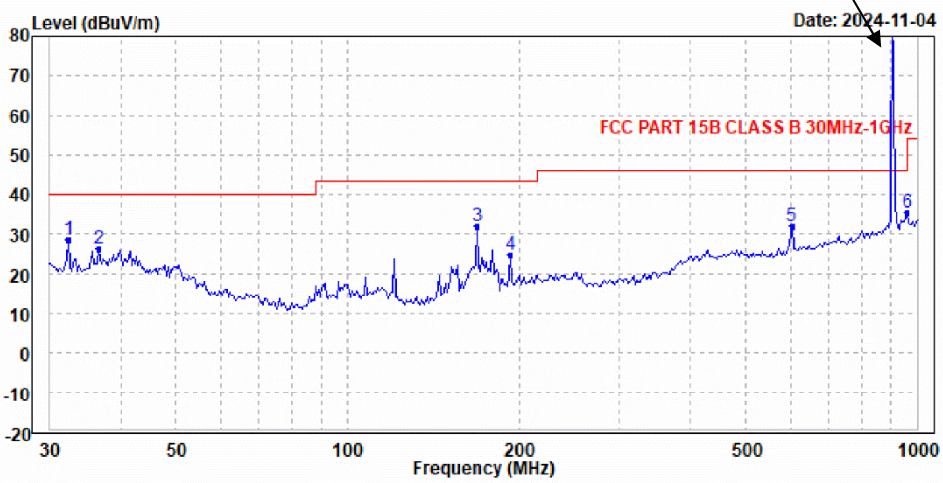


```
Condition       : 3m Vertical
Temp.(C)/Hum.(%): 24.5(C)/54.0(%)
Press           : 100.3kpa
Product         : WisNode Bridge Serial Prime
Model No.       : RAK2470
Power Rating    : AC 120V/60Hz
Test Engineer   : Linson
Test Mode       : Test Mode 1 : 120V/60Hz(Adaptor) + Normal working
Remark          :
```

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	32.411	28.59	34.83	21.98	0.00	0.68	28.90	40.00	-11.41	Peak
2	36.524	26.43	33.30	21.24	0.00	0.79	28.90	40.00	-13.57	Peak
3	168.997	31.93	44.09	15.50	0.00	1.31	28.97	43.50	-11.57	Peak
4	193.137	24.98	36.36	16.21	0.00	1.40	28.99	43.50	-18.52	Peak
5	602.929	32.15	32.82	26.56	0.00	2.27	29.50	46.00	-13.85	Peak
6 PP	958.714	35.70	30.36	31.27	0.00	3.03	28.96	46.00	-10.30	Peak

Appendix A.2: Test Plots of Radiated Emissions, above 1GHz

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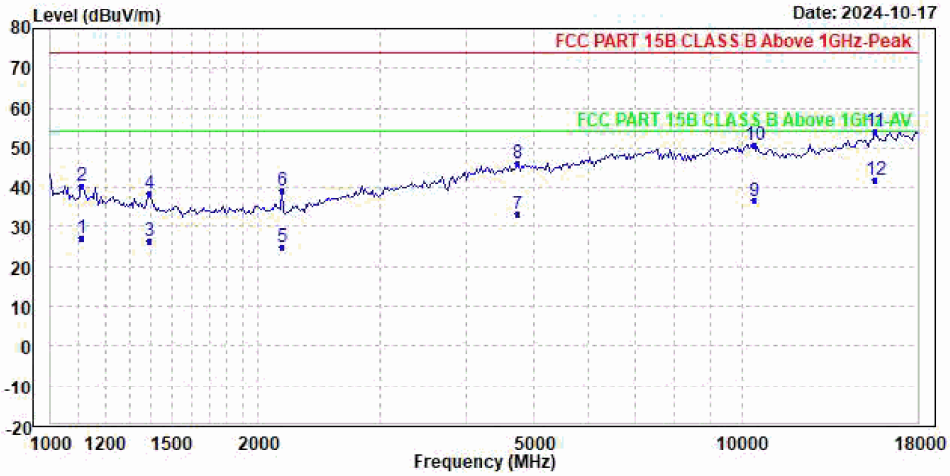

Condition : 3m Horizontal
Temp.(C)/Hum.(%): 24.2(C)/56.5(%)
Press : 100.2kpa
Product : WisNode Bridge Serial Prime
Model No. : RAK2470
Power Rating : DC_12V
Test Engineer : Jackson
Test Mode : Test Mode1: DC12V + Normal working
Remark :

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	1109.891	27.32	40.28	29.00	0.00	4.47	46.43	54.00	-26.68	Average
2	1109.891	40.46	53.42	29.00	0.00	4.47	46.43	74.00	-33.54	Peak
3	1391.194	26.28	39.33	28.50	0.00	5.22	46.77	54.00	-27.72	Average
4	1391.194	38.41	51.46	28.50	0.00	5.22	46.77	74.00	-35.59	Peak
5	2160.586	24.99	34.11	31.22	0.00	7.06	47.40	54.00	-29.01	Average
6	2160.586	39.13	48.25	31.22	0.00	7.06	47.40	74.00	-34.87	Peak
7	4749.960	33.18	35.28	34.45	0.00	9.30	45.85	54.00	-20.82	Average
8	4749.960	46.32	48.42	34.45	0.00	9.30	45.85	74.00	-27.68	Peak
9	10442.590	36.58	33.19	38.60	0.00	11.91	47.12	54.00	-17.42	Average
10	10442.590	50.72	47.33	38.60	0.00	11.91	47.12	74.00	-23.28	Peak
11	PK15573.390	54.12	46.59	41.27	0.00	13.05	46.79	74.00	-19.88	Peak
12	PP15573.390	41.99	34.46	41.27	0.00	13.05	46.79	54.00	-12.01	Average

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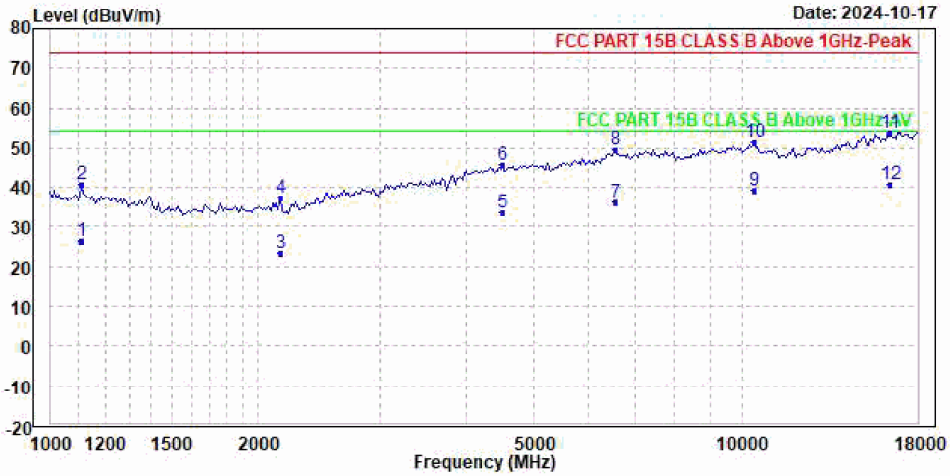

Condition : 3m Vertical
Temp.(C)/Hum.(%): 24.2(C)/56.5(%)
Press : 100.2kpa
Product : WisNode Bridge Serial Prime
Model No. : RAK2470
Power Rating : DC_12V
Test Engineer : Jackson
Test Mode : Test Mode1: DC12V + Normal working
Remark :

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	1109.891	26.56	39.52	29.00	0.00	4.47	46.43	54.00	-27.44	Average
2	1109.891	40.71	53.67	29.00	0.00	4.47	46.43	74.00	-33.29	Peak
3	2148.108	23.32	32.47	31.21	0.00	7.04	47.40	54.00	-30.68	Average
4	2148.108	37.47	46.62	31.21	0.00	7.04	47.40	74.00	-36.53	Peak
5	4508.684	33.70	35.89	34.40	0.00	9.21	45.80	54.00	-20.30	Average
6	4508.684	45.83	48.02	34.40	0.00	9.21	45.80	74.00	-28.17	Peak
7	6569.953	36.28	35.04	36.41	0.00	10.07	45.24	54.00	-17.72	Average
8	6569.953	49.42	48.18	36.41	0.00	10.07	45.24	74.00	-24.58	Peak
9	10442.590	39.38	35.99	38.60	0.00	11.91	47.12	54.00	-14.62	Average
10	10442.590	51.50	48.11	38.60	0.00	11.91	47.12	74.00	-22.50	Peak
11	PK16406.780	53.93	46.09	41.43	0.00	13.63	47.22	74.00	-20.07	Peak
12	PP16406.780	40.80	32.96	41.43	0.00	13.63	47.22	54.00	-13.20	Average

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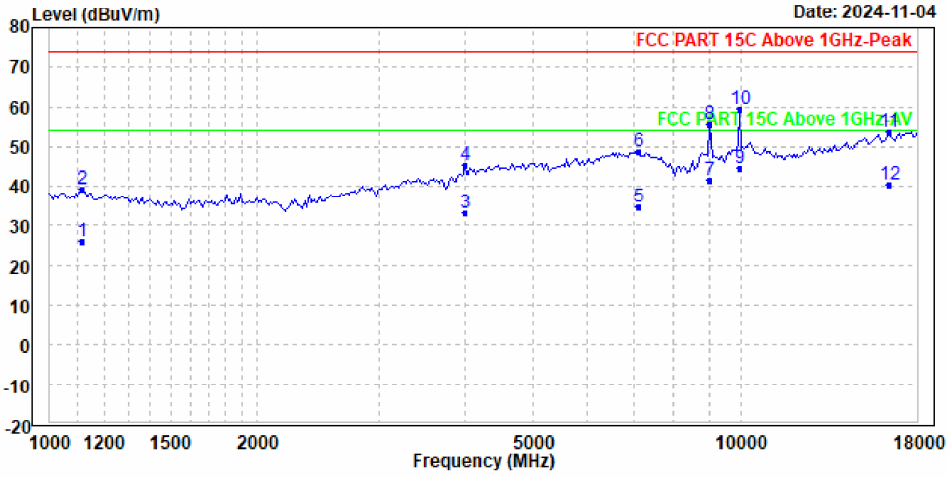

Condition : 3m Horizontal
Temp.(C)/Hum.(%): 24.5(C)/54.0(%)
Press : 100.3kpa
Product : WisNode Bridge Serial Prime
Model No. : RAK2470
Power Rating : AC 120V/60Hz
Test Engineer : Linson
Test Mode : Test Mode 1 : 120V/60Hz(Adaptor) + Normal working
Remark :

		Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
		MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1		1116.339	26.17	39.13	28.99	0.00	4.49	46.44	54.00	-27.83	Average
2		1116.339	39.31	52.27	28.99	0.00	4.49	46.44	74.00	-34.69	Peak
3		3992.296	33.27	36.20	33.78	0.00	9.00	45.71	54.00	-20.73	Average
4		3992.296	45.40	48.33	33.78	0.00	9.00	45.71	74.00	-28.60	Peak
5		7124.925	34.68	33.39	36.50	0.00	10.31	45.52	54.00	-19.32	Average
6		7124.925	48.83	47.54	36.50	0.00	10.31	45.52	74.00	-25.17	Peak
7		9034.809	41.60	38.81	36.65	0.00	11.30	45.16	54.00	-12.40	Average
8		9034.809	55.74	52.95	36.65	0.00	11.30	45.16	74.00	-18.26	Peak
9	PP	9969.738	44.56	41.24	37.77	0.00	12.01	46.46	54.00	-9.44	Average
10	PK	9969.738	59.36	56.04	37.77	0.00	12.01	46.46	74.00	-14.64	Peak
11		16406.780	53.67	45.83	41.43	0.00	13.63	47.22	74.00	-20.33	Peak
12		16406.780	40.53	32.69	41.43	0.00	13.63	47.22	54.00	-13.47	Average

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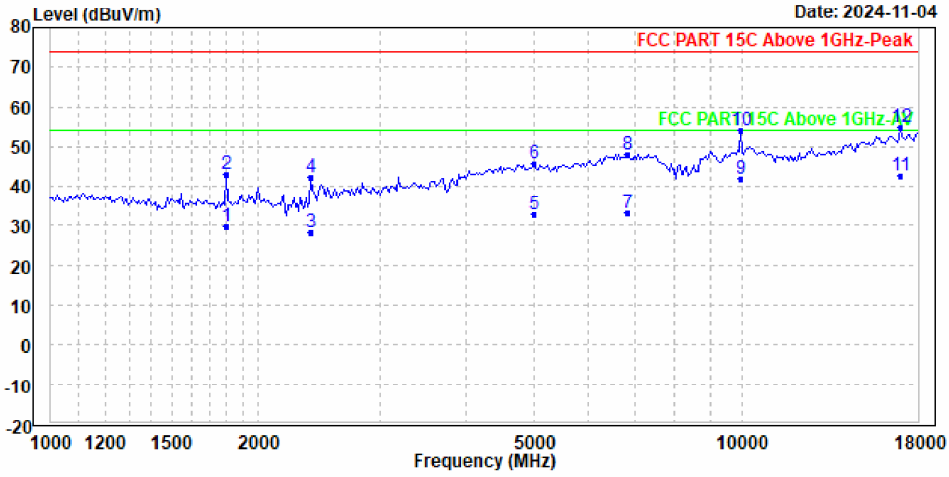

Condition : 3m Vertical
Temp.(C)/Hum.(%): 24.5(C)/54.0(%)
Press : 100.3kpa
Product : WisNode Bridge Serial Prime
Model No. : RAK2470
Power Rating : AC 120V/60Hz
Test Engineer : Linson
Test Mode : Test Mode 1 : 120V/60Hz(Adaptor) + Normal working
Remark :

	Freq	Level	Read Level	Ant Factor	Aux Factor	Cable Loss	Preamp Factor	Limit Line	Over Limit	Remark
	MHz	dBuV/m	dBuV	dB/m	dB	dB	dB	dBuV/m	dB	
1	1795.036	29.93	40.94	29.89	0.00	6.30	47.20	54.00	-24.07	Average
2	1795.036	43.07	54.08	29.89	0.00	6.30	47.20	74.00	-30.93	Peak
3	2384.166	28.30	36.81	31.54	0.00	7.35	47.40	54.00	-25.70	Average
4	2384.166	42.45	50.96	31.54	0.00	7.35	47.40	74.00	-31.55	Peak
5	5004.148	32.68	34.68	34.50	0.00	9.40	45.90	54.00	-21.32	Average
6	5004.148	45.81	47.81	34.50	0.00	9.40	45.90	74.00	-28.19	Peak
7	6841.814	33.08	31.82	36.47	0.00	10.20	45.41	54.00	-20.92	Average
8	6841.814	48.24	46.98	36.47	0.00	10.20	45.41	74.00	-25.76	Peak
9	9969.738	42.04	38.72	37.77	0.00	12.01	46.46	54.00	-11.96	Average
10	9969.738	54.17	50.85	37.77	0.00	12.01	46.46	74.00	-19.83	Peak
11	PP16987.000	42.84	34.21	41.79	0.00	14.04	47.20	54.00	-11.16	Average
12	PK16987.000	54.97	46.34	41.79	0.00	14.04	47.20	74.00	-19.03	Peak